

Applicant: Thomas HOFMANN
Docket No. R.305990
Preliminary Amdt.

AMENDMENTS TO THE SPECIFICATION:

Page 1, please add the following new paragraphs before paragraph [0001]:

- [0000.2] CROSS-REFERENCE TO RELATED APPLICATIONS
- [0000.4] This application is a 35 USC 371 application of PCT/DE 2004/001692 filed on July 28, 2004.
- [0000.6] BACKGROUND OF THE INVENTION

Please replace paragraph [0001] with the following amended paragraph:

- [0001] ~~Prior Art~~ **Field of the Invention**

Please add the following new paragraph after paragraph [0002]:

- [0002.5] Description of the Prior Art

Page 2, please add the following new paragraph before paragraph [0005]:

- [0005.5] SUMMARY AND ADVANTAGES OF THE INVENTION

Please replace paragraph [0006] with the following amended paragraph:

- [0006] This object is attained in an internal combustion engine of the kind mentioned ~~at the beginning~~ above in that the exhaust treatment system has a pressure reservoir into which the delivery device feeds; this pressure reservoir is able to store the active ingredient under pressure and is directly connected to the injection device.

Please delete paragraph [0007].

Page 3, please delete paragraph [0009].

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Please replace paragraph [0011] with the following amended paragraph:

[0011] It is also advantageous if the pressure reservoir is connected to a pressure regulating device. This either permits a high degree of pressure constancy or, with an adjustable pressure regulating device, enables the pressure in the pressure reservoir to be varied, which permits an optimal adaptation of the pressure in the pressure reservoir to the current operating state of the exhaust treatment system and/or the internal combustion engine.

Please replace paragraph [0012] with the following amended paragraph:

[0012] [[A]] In a particularly advantageous embodiment, [[of]] the internal combustion engine ~~according to present invention~~ has a control and/or regulating unit that controls and/or regulates the delivery capacity of the delivery device, the pressure in the pressure reservoir, the time at which the injection of the active ingredient occurs, and/or the duration of the injection of the active ingredient as a function of the operating state of the internal combustion engine. This permits a particularly economical consumption of the active ingredient with a simultaneously optimal conversion rate of the active ingredient in the exhaust.

Page 5, please replace paragraph [0019] with the following amended paragraph:

[0019] Drawings **BRIEF DESCRIPTION OF THE DRAWINGS**

Please replace paragraph [0020] with the following amended paragraph:

[0020] A particularly preferred exemplary embodiment of the present invention will be explained in detail below, in conjunction with the accompanying drawings, in which: [.]

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Page 6, please replace paragraph [0023] with the following amended paragraph:

[0023] ~~Description of the Exemplary Embodiment~~

DESCRIPTION OF THE PREFERRED EMBODIMENT

Please replace paragraph [0024] with the following amended paragraph:

[0024] In Fig. 1, an internal combustion engine is labeled as a whole with the reference numeral 10. It has a number of combustion chambers 12, only one of which ~~[[=]]~~ labeled ~~with the reference numeral 12 [[=]]~~ is shown in Fig. 1 for the sake of clarity. Combustion air travels into the combustion chamber 12 via an inlet valve 14 and an intake tube 16. Sensors 15 and 17 detect a temperature TASP and a humidity HASP of the aspirated ambient air. The hot combustion gases are conveyed out of the combustion chamber 12 via an outlet valve 18 and an outlet tube 20. During operation, a crankshaft 21 is set into rotation. A fuel injection device 22 delivers fuel directly into the combustion chamber 12.

Please replace paragraph [0025] with the following amended paragraph:

[0025] The injected fuel in the current exemplary embodiment is diesel fuel. The fuel injection device 22 is connected to a fuel accumulator or rail 24 (“rail”). The fuel is stored at high pressure in this rail. A presupply pump 28 delivers fuel from a fuel tank 30 to a high-pressure fuel pump 26, which then delivers it to the ~~fuel accumulator~~ rail 24. A sensor 32 detects the pressure in the ~~fuel accumulator~~ rail 24 and a pressure regulator 34 adjusts this pressure. A quantity control valve 36 adjusts the delivery quantity of the high-pressure fuel pump 26. The above-mentioned components 22 through 36 are part of a conventional fuel system 37.

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Page 9, please replace paragraph [0031] with the following amended paragraph:

[0031] Based on these values, control variables required for operating the exhaust treatment system 38 are determined in the processing block 62. These include a pressure PR_UPR in the urea pressure reservoir 50, a triggering voltage U_[[UPR]] MSV for the quantity control valve 56, which in turn adjusts a delivery quantity M_UPR Q-DD for the delivery device 49, an injection duration TI_UPR UID of the injection device 42 for the urea 43, and a bit B_HEAT that turns the heating unit 58 on and off.

Please replace paragraph [0032] with the following amended paragraph:

[0032] Is clear that in the internal combustion engine 10, the operation of the exhaust treatment system 38 is essentially controlled by means of operating values of the engine 10. The pressure PR_UPR in the urea pressure reservoir 50 and the injection duration TI_UPR UID of the urea injection device 42 can be used to adapt the injected quantity on the one hand and the degree of atomization of the urea/water solution 43 on the other to the current operating requirements of the internal combustion engine 10. On the one hand, this assures an optimal conversion of the injected urea/water solution 43, which leads to a reduction in pollutant emissions, and on the other, the urea/water solution 43 can be used very economically since it is possible to avoid generating too much ammonia, but at the same time to assure an almost 100% conversion rate.

Page 10, please replace paragraph [0035] with the following amended paragraph:

[0035] In the present exemplary embodiment, the active ingredient is referred to as urea 43. Naturally, however, the above-described embodiment of the exhaust treatment system 38 can

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use any other suitable substance as the active ingredient, as long as this substance can be injected into the exhaust. For example, this could include the injection of diesel fuel, or in the most general sense, hydrocarbon HC, or also the injection of gaseous or powdered substances.

Please add the following new paragraph after paragraph [0036]:

[0037] The foregoing relates to preferred exemplary embodiment of the invention, it being understood that other variants and embodiments thereof are possible within the spirit and scope of the invention, the latter being defined by the appended claims.